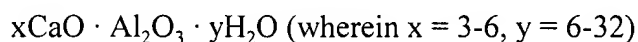


AMENDMENTS TO THE CLAIMS

Claims 1-34 (Cancelled)

Claim 35 (New) A process for producing calcium compounds containing water of crystallization, which comprises:

a) reacting an aqueous alkaline solution of sodium aluminate with calcium oxide or calcium hydroxide in the presence of carbon dioxide to form a precipitate of a mixture of calcium aluminate hydrates having the following formula:



b) separating the thus obtained calcium aluminum hydrate precipitate of a) by sedimentation, dehydration, and washing with water to form a filter cake and optionally drying the thus obtained filter cake;

c) suspending the filter cake obtained in b) in a wet and/or dried form in water and admixing the suspended filter cake with at least one mineral acid or with at least one salt thereof to form a calcium aluminate salt precipitate containing water of crystallization,

d) separating the calcium aluminate salt precipitate obtained in c) by sedimentation, optionally dehydration, and washing with water.

Claim 36 (New) The process according to claim 35, wherein as the aqueous alkaline sodium aluminate solution of a), a waste pickling lye obtained by surface-treatment of aluminum metal is used.

Claim 37 (New) The process according to claim 35, wherein as the aqueous alkaline sodium aluminate solution of a), a waste pickling lye is used wherein Na_2O and Al_2O_3 are present in a mole ratio of (1.0 to 10.0):1 is used.

Claim 38 (New) The process according to claim 37 wherein the Na_2O and Al_2O_3 are present in a mole ratio of (1.2 to 2.5):1.

Claim 39 **(New)** The process according to claim 35, wherein in a) an aqueous alkaline sodium aluminate solution is used as a starting material and either calcium oxide or calcium hydroxide is added thereto.

Claim 40 **(New)** The process according to claim 35, wherein in a) either calcium oxide or calcium oxide is used as a starting material and then the aqueous alkaline sodium aluminate solution is added thereto.

Claim 41 **(New)** The process according to claim 39, wherein from 2 to 8 mole a of CaO equivalents, based on 1 mole of Al_2O_3 equivalent, are added.

Claim 42 **(New)** The process according to claim 41 where 3 to 5 moles of CaO equivalents based on 1 mole of Al_2O_3 equivalent, are added.

Claim 43 **(New)** The process according to claim 35 wherein the precipitation of the precipitate in a) is carried out within a reaction time of from 5 to 3000 minutes, at a temperature of from 5 to 60°C.

Claim 44 **(New)** The process according to claim 43 wherein the reaction time is from 60 to 600 minutes and the temperature is from 30 to 50°C.

Claim 45 **(New)** The process according to claim 35, wherein in the calcium aluminate hydrate precipitate in b) is mechanically dehydrated.

Claim 46 **(New)** The process according to claim 45, wherein the mechanical dehydration is performed by using a pressure filtration, a chamber filter press or a membrane filter press or by using a vacuum belt filter or a centrifuge.

Claim 47 **(New)** The process according to claim 45, wherein the dehydrated calcium aluminate hydrate precipitate is dried at a temperature of $< 100^{\circ}\text{C}$ and crushed.

Claim 48 **(New)** The process according to claim 45, wherein the dehydrated calcium aluminate hydrate precipitate is dried at a temperature of from 100 to 1300°C , calcined and crushed.

Claim 49 **(New)** The process according to claim 48 wherein the temperature is from 100 to 500°C .

Claim 50 **(New)** The process according to claim 35 wherein the calcium aluminate hydrate of d) is dried at a temperature of $< 100^{\circ}\text{C}$ and crushed.

Claim 51 **(New)** The process according to claim 35, wherein the mineral acid is a member selected from the group consisting of hydrochloric acid, hydrofluoric acid, sulfuric acid, silicic acid, carbonic acid and salts thereof.

Claim 52 **(New)** The process according to claim 51 wherein the salts are alkali metal salts, alkaline earth metal salts or aluminum salts.

Claim 53 **(New)** The process according to claim 35, wherein as a mineral acid a sulfuric acid containing aluminum is used.

Claim 54 **(New)** The process according to claim 53 wherein the acid is a waste acid from the electrolytic oxidation of aluminum.

Claim 55 **(New)** The process according to claim 35, wherein in c) a sulfate is added to the filter cake suspended in water in a ratio of 1 part by weight of Al to 4 to 7 parts by weight of SO_4 , based on the total aluminum content.

Claim 56 **(New)** The process according to claim 51, wherein anions of one or more further mineral acids selected from the group consisting of hydrochloric acid, hydrofluoric acid, sulfuric acid, silicic acid acid, carbonic acid and salts thereof are additionally added in amounts of 1 part by weight of Al to 0.5 to 10 parts by weight of anions, based on the total aluminum content of the suspension.

Claim 57 **(New)** The process according to claim 56 wherein said salts are one or more of alkali, alkaline earth metal and aluminum salts.

Claim 58 **(New)** Paper, paints or lacquers containing the product of the process of claim 35 as a filler.

Claim 59 **(New)** A flame retardant filler containing the product of the process of claim 35.